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## NOTES ON THE LIFE HISTORY OF *JALYSUS SPINOSUS*

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In August, 1931, while crossing a field pink with the blossoms of *Gaura biennis*, I suddenly discovered a multitude of slender bugs with legs and antennae as attenuated as hairs. Specimens in various stages of development appeared to be feeding on *Gaura*. The adults were copulating in the peculiar "tail-to-tail" manner characteristic of Hemiptera. Further search revealed the presence of eggs.

A little library research identified this bug as *Jalysus spinosus*, and the absence of biological data on this insect encouraged me to write the following account.

The eggs are found singly, chiefly on flower clusters, and especially on the green fruits of *Gaura*. They are oval-elongate, measuring approximately 0.6 by 0.2 mm. One end bears four little, incurved hooks, each ending in a slight enlargement (Fig. 1). The presence of two scarlet spots (the eyes) at this end of the egg advertise that the young bug is about to emerge.

*Stadium I.* With scarcely perceptible movements the insect emerges from the egg. One that was observed required twenty-seven minutes for this process. With optical aid a not very distinct "cephalic heart" is visible. The head appears first; the tips of the antennae, legs, and abdomen, last. Ecdysis follows the same general plan, excepting that the thorax precedes the head.

The young bug is, like the egg, orange in color, and translucent. Its "profile" is like that of a crude letter S lying on its side (Fig. 2). The abdomen and thorax are nearly equal in size. Just before the first ecdysis the length of the body has increased to 1.0 mm.

*Stadium II.* The fourth day after hatching ecdysis occurs. The bugs are then yellow-green with the tip of the head orange.

Appendages darken somewhat with age. The head becomes straighter but the abdomen is still "bowed" dorsoventrally. The eyes, as in all stages excepting the adult, are bright scarlet. Before the next ecdysis length increases to 2.0 mm. and the width to 0.5 mm.

*Stadium III.* During the seventh day ecdysis again occurs. The insect is now pale green in color with a mid-dorsal white line extending from the frons to the tip of the abdomen, and two dorso-lateral lines extending the length of the abdomen. The latter has become almost straight and of adult proportions. The average length of the body at the end of this stage is 3.0 mm.

*Stadium IV.* On the tenth day a third ecdysis takes place. The green color persists; the white lines are very distinct. The median line widens at its anterior end to form a spot. The "bowed" condition has practically disappeared, while appearance is further modified by the presence of wing-pads. The length of the body is 4.8 mm., the width 1.0 mm. After this stage there is practically no increase in width.

*Stadium V.* Ecdysis is repeated on the thirteenth day. The wing-pads increase in size. The average length is 5.8 mm. (Fig. 3).

*Adult.* On or about the sixteenth day the bug makes its last ecdysis. Recently emerged specimens are pale green with nearly white hemelytra, but in three hours the body has assumed a chocolate color with the hemelytra gray-brown. The distal segment of the proboscis, the distal segment of each antenna, and the tarsi, are black. The eyes are red-brown. The median pale line persists. The remaining markings are too complex for description here. The average length of the adult body is 7.0 mm., the width 1.0 mm. Females are a little broader than males (Fig. 4).

The insect appears to feed exclusively on *Gaura*; at least this plant was all that was found necessary to bring insects to maturity.

The binocular magnifier which enabled the author to construct the drawings was kindly supplied by the Illinois School of Pharmacy through Mr. Paul Carpenter.

#### PLATE

- Fig. 1. Egg of *Jalysus spinosus*.  $\times 40$ .  
 Fig. 2. *J. spinosus* as it emerges from egg.  $\times 40$ .  
 Fig. 3. Pre-adult or nymphal form of *J. spinosus*.  $\times 40$ .  
 Fig. 4. *J. spinosus*, adult.  $\times 40$ .

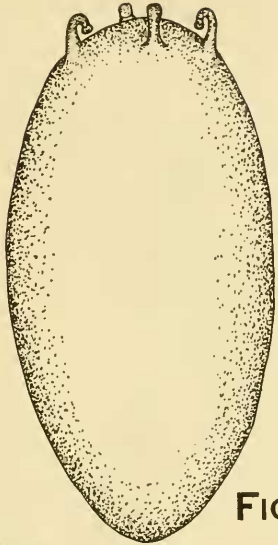


FIG. 1

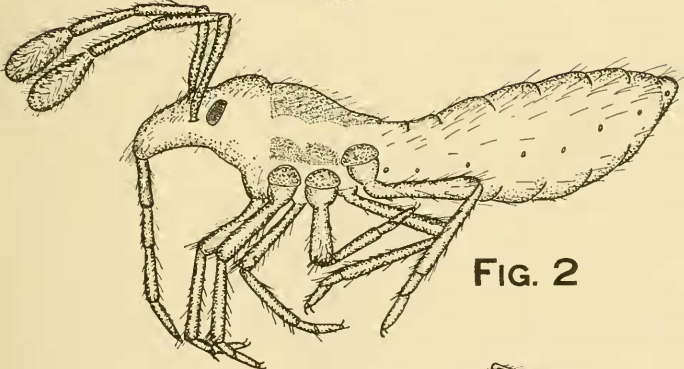


FIG. 2

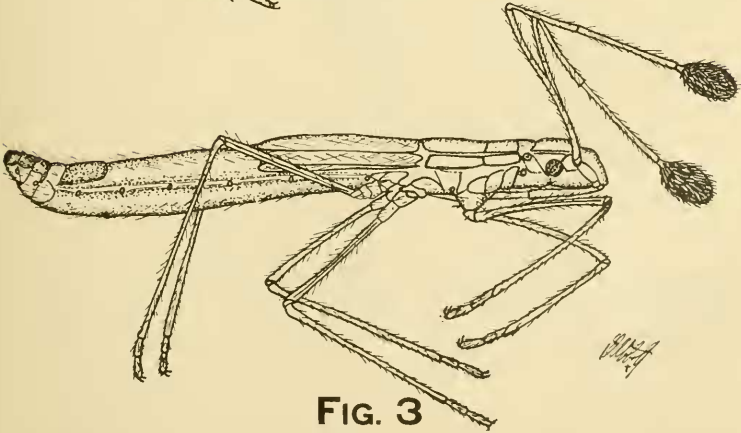


FIG. 3

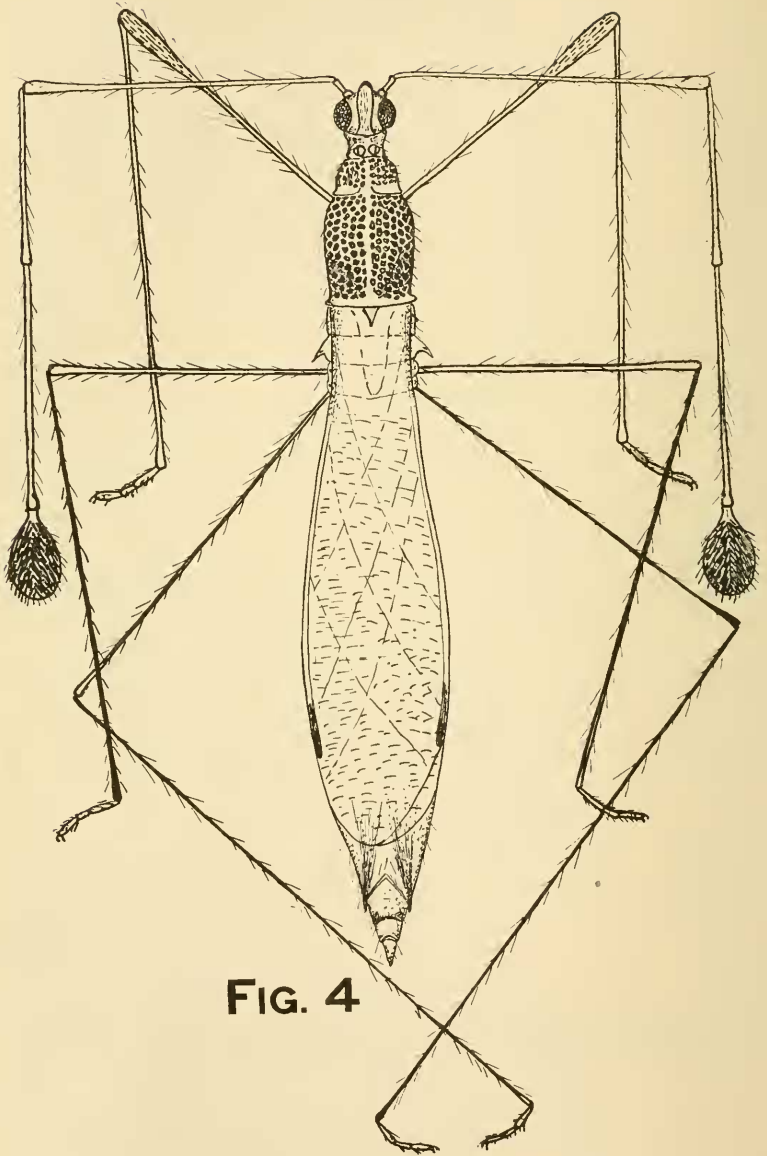


FIG. 4